REMARKS

This response is filed in response to an Office Action dated November 23, 2007, issued by the United States Patent and Trademark Office in connection with the above identified application.

Applicant has carefully studied the outstanding Office Action. The present response is intended to be fully responsive to all points of rejection raised by the Examiner.

Claims 1-9 and 12-13 are pending in the application. Claims 1, 5-9 and 12-13 have been amended in order to overcome the §112 rejection.

Applicant will argue below that claims 1 and 7 have been rejected under §102 because the office action relies on a misinterpretation of a fundamental aspect of the invention.

All amendments have been made solely for adding clarity and consistency to the claim language and no new matter is introduced. No amendments have been made with respect to the §102 rejection, and applicant will argue below that such amendments are unnecessary.

Reconsideration of the application is respectfully requested.

Claim Rejections – 35 USC § 112

Claims 1-9 and 12-13 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language of claims 1, 5-9 and 12-13 have been amended to better clarify and distinctly claim the subject matter in order to overcome the §112 rejection. Applicant respectfully submits that the objections are now moot.

Claim Rejections – 35 USC § 102

Claims 1-9, 12 and 13 are rejected under 35 USC 102(e) as being anticipated by Sinquin et al. (US Patent 6,425,098). Applicants respectfully traverse this rejection in view of the remarks that follow.

Amendments have only been made to the claims to overcome the rejections under 35 USC 112, second paragraph, above. No amendments have been made in respect of the 102(e) rejection.

Applicant respectfully submits that the office action has misunderstood and misinterpreted a unique and fundamental aspect of the present invention that is inherently different from and is not anticipated by Sinquin et al. (US Patent 6,425,098).

Applicant respectfully submits that the office action rejection and the "Response to Arguments" are based on this misinterpretation, as explained below:

As is well-established, in order to successfully assert a *prima facie* case of anticipation, the Examiner must provide a single prior art document that includes every element and limitation of the claim or claims being rejected. Therefore, if even one element or limitation is missing from the cited document, the Examiner has not succeeded in making a prima facie case.

Claim 1 discloses a method for producing a copy-protected audio compact disc, containing audio data samples of an audio signal which, *inter alia*, includes the steps of:

"overwriting data symbols with erroneous symbols" and

"disabling the error-correction of the error-correction codewords associated with the data symbols by altering at least one of a plurality of parity symbols in the codewords associated with the data symbols, thereby rendering said erroneous symbols uncorrectable.".

Claim 7 discloses a copy-protected audio compact disc containing audio data samples of an audio signal, which includes "at least one uncorrectable erroneous symbol which is written to the disk in place of one of the data symbols representing at least one data sample of the audio signal" and wherein "the overwritten data symbol have error-correction codewords associated therewith. The error-correction codewords comprise at least one altered parity symbol contained within the error-correction codewords associated with said overwritten data symbol".

Sinquin describes a method for protecting data which introduces intentionally erroneous data values and generating error correcting codes as though all values (including the erroneous data values) are correct.

Sinquin's method for protecting an audio compact disc relies on introducing an error into a selected frame, for example (column 4, line 23) without correcting the error correction code to match the erroneous signal. The playback device is able to skip over and ignore the erroneous frame. However, in an unauthorized copy of the CD, new error correcting codes are generated as though all values (including the erroneous data values) are correct. Thus, the erroneous value will not be flagged and on playback, the copy will contain audio distortions (Sinquin Col. 11, lines 17-33). The modification of the error correction codes mentioned by Sinquin applies to the data stored on the recorded CD. (emphasis added).

In contrast, the present application modifies the audio data in the original disc by replacing it with erroneous data and also altering the respective error correction codes for that symbol on the original disc. The sector containing the erroneous data is thus uncorrectable. A playing device does not try to correct these sectors on the original disc and to render them it simply interpolates them (see line 19 on page 16 of the Application). This interpolation gives a good rendition of the music.

The copying device, however, has no concept of interpolation and accurately tries to read every single sector and will hesitate and re-read the uncorrectable sector in the hope of being able to read it better on successive occasions. This hesitation and re-read produces unpleasant "clicks" when trying to play the copied audio track. When copied, the error correcting codes for the altered data are not recalculated and they remain the same as in the original disc. Thus these uncorrectable sectors are used to ensure that a copied disc will output noise and not play well.

Furthermore, in describing an embodiment of the invention (col 9, lines 40-48) Sinquin teaches *replacing a data value with erroneous data but does not teach altering parity (error-correcting) symbols*. **Column 9 line 40–48 of Sinquin states**:

> "Samples 72 in FIG. 4 may be taken to illustrate, by way of
> example, the amplitude of a given frequency component of an audio
> signal 70 to be recorded on CD 68. (In reality, the relationship of the

audio signals to the data recorded on the CD is far more complex, but the simplified illustration of FIG. 4 is useful in understanding certain aspects of the present invention.) *Erroneous data value 78 is recorded on the CD, in place of a correct sample 74, as the result of the operation of error generator 62 (FIG. 3).* When value 78 is input to error corrector 48 (FIG. 2), it is compared to the corresponding error code, read from CD 68 at the same time. Assuming that the error is so severe that corrector 48 cannot rectify it, interpolator 54 is actuated to conceal the error, and to output an interpolated value 74 in place of sample 78. When signal 70 is played back, a smooth segment 76 is generated, using value 74, rather than an erroneous segment 80 that would be generated in the absence of error concealment." (*emphasis* added).

The Office Action (para.7) states that Sinquin discloses a method for producing a copy protected CD including *inter alia*, "overwriting the symbol with erroneous symbols (column 9, lines 46-48)" and "disabling the error-correction of the error-correction codewords associated with said data symbols by altering at least one of a plurality of parity symbols in the codewords associated with said data symbols" (column 10, lines 60-column 11, lines 33 and column 3 line 58 –column 4 line 9).

Applicants respectfully submit that the Office Action is mistaken in its assertion. Column 9, lines 46-48 of Sinquin has been discussed above. ***Column 10, lines 60-column 11, lines 33 of Sinquin states***:

"Each frame of data read from CD 68 is decoded from fourteen-to eight-bit format and stored temporarily by PC 92. Only the actual audio data values in segments 26 and 34 (FIG. 1) are read out and stored, however, and the CIRC values in segments 32 and 36 are discarded. In order to ensure that PC 92 will receive the audio data values without CIRC correction, *error generator 66 (FIG. 3) manipulates the information recorded on CD 68 so that CD-ROM drive 94 identifies the audio track containing the data as a digital data track, instead of as an audio track.* This manipulation may be accomplished in a number of

ways, based on features of the IEC 908 standard: By manipulating mode bits in the subcode Q channel of the track. By manipulating mode bits in the table of contents (TOC) of the CD. By introducing digital data on the CD either in other tracks or in pause and pregap areas of the audio track. By writing CD 68 as a multi-session CD. An audio CD player will read only the first session, which is a standard audio session. CD-ROM drive 94, however, in conformance with the multi-session CD standard, will first read the last session in the TOC, in which the tracks of the first session are marked as digital." (*emphasis* added)

"Therefore, *intentionally-erroneous data values introduced in* CD 68, such as data value 78 (FIG. 4), are also stored in the PC memory, without indication that they are erroneous." (emphasis added)

"Prior to recording the stored data on CD 98 in standard audio CD format, new error correcting codes (CIRC) must be generated by CD drive 96. In this stage of code generation, there is no indication that data values such as value 78 are erroneous, and the corresponding codes are generated as though all data values were correct. The data (including the intentional errors and corresponding "correct" error codes) are re-encoded in fourteen-bit format and written to CD 98. Since the error correcting codes in the frame containing data value 78 now indicate that there is nothing wrong with this value, processor 40 (FIG. 2) will not flag the value as erroneous and will do nothing to conceal it. The playback of the unauthorized copy will therefore contain severe and unrecoverable audio distortions." (emphasis added)

Column 3 line 58 –column 4 line 9 of Sinquin states:

"In some preferred embodiments of the present invention, applicable particularly to audio and video recordings, the medium contains segments of recorded data, which are interspersed with error detection codes, or error correcting codes, as are known in the art. Ordinarily, when a segment of recorded data is read out from the

medium, and the corresponding code indicates that an uncorrectable error is present in the segment, *the erroneous data are concealed by interpolation between neighboring data values*, as described in the Background of the Invention, for example. *During recording of the original medium, errors are introduced in certain data segments, without providing error detection codes capable of correcting such segments*. Preferably the segments chosen for this purpose are those with respect to which it is determined that the normal error concealment mechanism on playback will not cause a noticeable effect in sound quality. Thus, the intentionally-introduced errors in the original medium are substantially concealed when the medium is played back." (*emphasis* added)

It is clear, from the text cited above, that Sinquin introduces errors which are not correctable by normal error detection codes.

The Office Action further states in the "Response to Arguments" that "the examiner *believes* that Sinquin discloses that the parity symbols in the codewords are altered (column 10 lines 1-5, where it is explicitly stated that the error correcting codes are altered (see also column 11 lines 17-33)".

Column 10 lines 1-5 of Sinquin states:

"In an unauthorized copy of the CD, however, the error correcting codes will be altered, *as described hereinbelow*, so that the audio output will instead have the distorted form of erroneous segment 80."

Column 11 lines 17-33 of Sinquin refers to *the method* and states (as mentioned earlier):

"Prior to recording the stored data on CD 98 in standard audio CD format, new error correcting codes (CIRC) must be generated by CD drive 96. *In this stage of code generation, there is no indication that data values such as value 78 are erroneous, and the corresponding codes are generated as though all data values were correct*. The data

(including the intentional errors and corresponding "correct" error codes) are re-encoded in fourteen-bit format and written to CD 98. *Since the error correcting codes in the frame containing data value 78 now indicate that there is nothing wrong with this value, processor 40 (FIG. 2) will not flag the value as erroneous and will do nothing to conceal it.* The playback of the unauthorized copy will therefore contain severe and unrecoverable audio distortions." (*emphasis* added)

Sinquin's does NOT make the alteration at the time of manufacture. Sinquin states categorically col 10, lines 42-44: "The CIRC data (Cross Interleave Reed Solomon Code) in segments 32 and 36 of the current frame are NOT changed, however." The citation of the Office Action regarding alteration of parity symbols is Sinquin's recitation of what happens when an unauthorized copy is made of the copy protected CD.

It is clear from the above quotes that Sinquin does NOT in fact disclose "that parity symbols are altered" and that the Office Action has misinterpreted Sinquin! Thus, since Sinquin teaches that the CIRC data is not changed, in contrast to Claims 1 and 7, Sinquin does not disclose disabling the error-correction of the error-correction codewords or the altering the parity symbols (of the CIRC).

In fact, Sinquin only mentions the word "parity" on a single occasion in the Background to the Invention (column 1, line 64), as follows: "Each data segment comprises twelve symbols, containing data and parity information, typically corresponding to digitized audio data" to explain the prior art. Neither the phrase "parity symbols" nor "the alteration of parity symbols" is mentioned by Sinquin!

Thus, Sinquin does not disclose the features of independent claims 1 and 7, and specifically does not describe or disclose the limitation of *"disabling the error-correction of the error-correction codewords associated with the data symbols by altering at least one of a plurality of parity symbols in the codewords associated with the data symbols"* (*emphasis* added).

Thus, Applicants respectfully submit that the rejection of independent claims 1 and 7 has been overcome.

Since claims 2-6 and 12 depend from claim 1 and claims 8-9 and 13 depend from claim 7, Applicants believe the rejection of these claims has been overcome for at least the same reason.
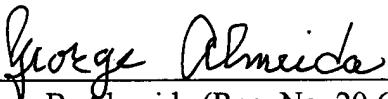
The prior art made of record is noted.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below.

In view of the above amendments and remarks, it is respectfully submitted that the claims are patentable over the art of record and are now in condition for allowance. Prompt notice of allowance is respectfully solicited.

Respectfully submitted,

MACROVISION CORPORATION

Dated: __3/19__, 2008

George B. Almeida (Reg. No. 20,696)

Customer No. 031665
Macrovision Corporation
2830 De La Cruz Blvd.
Santa Clara, CA 95050
Tel: (408) 562-8496
Fax: (408) 567-1800